AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all prior versions and listings:

1. (original): A composition for generating an immune response in a mammal, said composition comprising,

a polynucleotide component consisting essentially of one polynucleotide encoding an HIV immunogenic polypeptide derived from a first HIV strain, and

a polypeptide component comprising one or more HIV immunogenic polypeptides analogous to the polypeptide encoded by said polynucleotide component, with the proviso that at least one HIV immunogenic polypeptide of the polypeptide component is derived from a second HIV strain, wherein said first HIV strain and said second HIV strain are different.

2. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 1, wherein said second HIV strain is an HIV strain of the same subtype as said first HIV strain.

3. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 1, wherein said second HIV strain is an HIV strain of a different subtype than said first HIV strain.

4. (original): A composition for generating an immune response in a mammal, said composition comprising,

a polynucleotide component comprising two or more polynucleotide sequences comprising coding sequences for two or more analogous HIV immunogenic polypeptides derived from different HIV strains, and

a polypeptide component comprising one or more HIV immunogenic polypeptides analogous to the polypeptide encoded by said polynucleotide component, with the proviso that, if the polypeptide component comprises the same number or greater than the number of analogous HIV immunogenic polypeptides encoded by the polynucleotide component, then at least one of the HIV immunogenic polypeptides of the polypeptide component is derived from a different HIV strain than the HIV immunogenic polypeptides provided by the polynucleotide component.

5. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 4, wherein said coding sequences for at least two of the HIV immunogenic polypeptides are derived from different HIV strains of the same subtype.

6. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 5, wherein said at least one HIV immunogenic polypeptides of the polypeptide component derived from a different HIV strain than the HIV immunogenic polypeptides provided by the polynucleotide component is derived from a different HIV strain of the same subtype as said HIV immunogenic polypeptides provided by the polynucleotide component.

7. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 4, wherein said coding sequences for at least two of the HIV immunogenic polypeptides are derived from different HIV strains of different subtypes.

8. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 4 ~~7~~, wherein said at least one HIV immunogenic polypeptides of the polypeptide composition derived from a different HIV strain than the HIV immunogenic polypeptides provided by the polynucleotide component is derived from a different HIV strain of a different subtype from said HIV immunogenic polypeptides provided by the polynucleotide component.

9. (currently amended): ~~A~~ The composition ~~as in~~ according to claim 1, wherein ~~A composition for generating an immune response in a mammal, said composition comprising,~~

~~a polynucleotide component consisting essentially of one polynucleotide encoding an HIV immunogenic polypeptide derived from a first HIV strain, and~~

~~a polypeptide component comprising one or more HIV immunogenic polypeptides analogous to the polypeptide encoded by said polynucleotide component, with the proviso that at least one HIV immunogenic polypeptide of the polypeptide component is derived from a second HIV strain, wherein said first HIV strain and said second HIV strain are different;~~

~~with the provisos that~~ (i) the polynucleotide component does not encode an analogous HIV immunogenic polypeptide derived from any subtype other than the first subtype, and (ii) the polypeptide component does not comprise an analogous HIV immunogenic polypeptide derived from any subtype other than the first subtype.

10. (original): A composition for generating an immune response in a mammal, said composition comprising,

a polynucleotide component comprising two or more polynucleotide sequences comprising coding sequences for two or more analogous HIV immunogenic polypeptides derived from different HIV strains, and

a polypeptide component comprising one or more HIV immunogenic polypeptides analogous to the analogous polypeptides encoded by said polynucleotide component, with the proviso that at least one of the HIV immunogenic polypeptides of the polypeptide component is derived from a different HIV strain than one of the analogous HIV immunogenic polypeptides provided by the polynucleotide component.

11. (original): The composition of claim 10 wherein one or more of the analogous HIV immunogenic polypeptides are from different HIV subtypes.

12. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein said polynucleotide component or said polypeptide component comprises at least one polynucleotide that is a native polynucleotides or polypeptide.

13. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein said polynucleotide component comprises at least one polynucleotide that is a synthetic polynucleotide.

14. (original): The composition of claim 13, wherein said synthetic polynucleotide comprises codons optimized for expression in mammalian cells.

15. (original): The composition of claim 14, wherein said synthetic polynucleotide comprises codons optimized for expression in human cells.

16. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein the polynucleotide component encoding an HIV immunogenic polypeptide and the polypeptide component comprising an HIV immunogenic polypeptide are HIV envelope polypeptides.

17. (currently amended): The composition of claim 1 ~~16~~, wherein at least one of said polynucleotide components encoding an HIV immunogenic polypeptide and/or at least one of said polypeptides ~~saiad polynucleotide component comprising HIV immunogenic polypeptides~~ comprises an alteration or a mutation.

18. (currently amended): The composition of claim 16 wherein said ~~polynucleotides component encoding said HIV immunogenic polypeptide comprises an alteration or mutation~~ alteration or mutation is selected from the group consisting of a mutation in the cleavage site or a mutation in the glycosylation site; a deletion or modification of the V1 region; a deletion or modification of the V2 region; a deletion or modification of the V3 region; a mutation that exposes a neutralizing epitope of an HIV Env protein; and combinations thereof.

19 to 25. (canceled).

26. (currently amended): The composition of claim ~~25~~ 18, wherein at least one of said HIV polypeptide comprises an Env polypeptide and wherein at least one of said envelope polypeptides is modified to expose a CD4 binding region or an envelope binding region that binds to a CCR5 chemokine co-receptor.

27. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein at least one polynucleotide encoding an HIV immunogenic polypeptide encodes an immunogenic HIV polypeptide selected from the group consisting of: Gag, Env, Pol, Prot, Int, RT, vif, vpr, vpu, tat, rev, and nef.

28. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein the first HIV subtype is selected from the group consisting of: subtype A, subtype B, subtype C, subtype D, subtype E, subtype F, subtype G, subtype H, subtype I, subtype J, subtype K, subtype N and subtype O.

29. (canceled).

30. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein said polynucleotide component further comprises a sequence encoding ~~an~~ one or more

additional antigenic polypeptide, with the proviso that the additional antigenic polypeptides are ~~is~~ not an immunogenic polypeptides derived from an HIV-1 strain.

31. (original): The composition of claim 30, wherein said polypeptide component further comprises a polypeptide having an additional antigenic peptide, with the proviso that the additional antigenic polypeptide is not an immunogenic polypeptide derived from an HIV-1 strain.

32. (currently amended): The composition of claim 1 ~~any of claims 1 to 11~~, wherein said polynucleotide component further comprises sequences encoding one or more control elements compatible with expression in a selected host cell, wherein said control elements are operable linked to polynucleotides encoding HIV immunogenic polypeptides.

33. (original): The composition of claim 32, wherein said control elements are selected from the group consisting of a transcription promoter, a transcription enhancer element, a transcription termination signal, polyadenylation sequences, sequences for optimization of initiation of translation, an internal ribosome entry site, and translation termination sequences.

34. (original): The composition of claim 33, wherein said transcription promoter is selected from the group consisting of CMV, CMV+intron A, SV40, RSV, HIV-Ltr, MMLV-ltr, and metallothionein.

35. (currently amended): A method of generating an immune response in a subject, comprising,

providing a composition for generating an immune response in a mammal according to claim 1 ~~as in any of claims 1 to 34 and 74-82~~;

administering one or more ~~gene delivery~~ vectors comprising the polynucleotides of said polynucleotide component of the composition into said subject under conditions that are compatible with expression of said polynucleotides in said subject for the production of encoded HIV immunogenic polypeptides; and

administering the polypeptide component to said subject.

36. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors and said polypeptide component are administered concurrently.

37. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors and said polypeptide component are administered sequentially.

38. (original): The method of claim 35, wherein said polypeptide component further comprises an adjuvant.

39. (original): The method of claim 35, wherein said polynucleotide component further comprises a carrier.

40. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors are nonviral vectors.

41. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors are delivered using a particulate carrier.

42. (canceled).

43. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors are delivered using a PLG particle.

44. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors are encapsulated in a liposome preparation.

45. (currently amended): The method of claim 44, wherein said one or more ~~gene delivery~~ vectors are viral vectors.

46. (original): The method of claim 45, wherein said viral vectors are selected from the group consisting of different subtypes, species or serotypes of viral vectors.

47. (original): The method of claim 46, wherein said viral vectors are retroviral vectors.

48. (original): The method of claim 45, wherein said viral vector are lentiviral vectors.

49. (original): The method of claim 45, wherein said viral vectors are alphaviral vectors.

50. (original): The method of claim 45, wherein said viral vectors are adenoviral vectors.

51. (original): The method of claim 50 wherein said adenoviral vectors are live replicating vectors.

52. (original): The method of claim 50 wherein said adenoviral vectors are non-replicating vectors.

53. (original): The method of claim 35, wherein said subject is a mammal.

54. (original): The method of claim 53, wherein said mammal is a human.

55. (original): The method of claim 35, wherein said immune response comprises an adaptive immune response.

56. (original): The method of claim 55 wherein said immune response further comprises an innate immune response.

57. (currently amended): The method of claim 35, wherein the immune response is selected from the group consisting of ~~55 or claim 56~~ which comprises an Antibody Dependent Cell Mediated Cytotoxic response, a humoral immune response, a cellular immune response, and combinations thereof.

58 to 59. (canceled).

60. (currently amended): The method of claim 35, wherein said one or more ~~gene delivery~~ vectors are administered intramuscularly, intramucosally, intranasally, subcutaneously, intradermally, transdermally, intravaginally, intrarectally, orally or intravenously.

61. (currently amended): The method of claim 35, wherein said immune response results in generating neutralizing antibodies in the subject against multiple strains derived from the one or more of said ~~first~~ HIV subtype.

62. (canceled).

63. (original): The method of claim 35 wherein said immune response comprises the in vivo generation in said subject of broadly neutralizing antibodies that neutralize multiple HIV isolates.

64. (original): The method of claim 63 wherein said broadly neutralizing antibodies are characterized in that they demonstrate neutralizing activity to HIV strains utilizing the CCR5 coreceptor.

65. (original): The method of claim 63 wherein said broadly neutralizing antibodies are characterized in that they demonstrate neutralizing activity against two or more HIV strains from the same HIV subtype.

66. (original): The method of claim 65 wherein said neutralizing antibodies demonstrate neutralizing activity against two or more HIV strains selected from the group consisting of the following HIV isolates: Bal, JR-FL; Bx08; 6101; 692; 1168; 1196; and ADA.

67. (original): The method of claim 63 wherein said broadly neutralizing antibodies are characterized in that they demonstrate neutralizing activity against two or more HIV strains from two or more different HIV subtypes.

68. (original): The method of claim 67 wherein said neutralizing antibodies demonstrate neutralizing activity against two or more HIV subtypes selected from the group consisting of the following HIV subtypes: A, B, C, D, E, F, G, and O.

69. (original): The method of claim 35 wherein said immune response comprises the generation in said subject of antibodies that mediate Antibody Dependent Cell Mediated Cytotoxicity (ADCC).

70. (original): The method of claim 69 wherein said antibodies are characterized in that they demonstrate ADCC activity against two or more HIV strains from two or more different HIV subtypes.

71. (original): The method of claim 70 wherein said antibodies demonstrate ADCC activity against two or more HIV subtypes selected from the group consisting of the following HIV subtypes: A, B, C, D, E, F, G, and O.

72. (original): The method of claim 69 wherein said broadly neutralizing antibodies are characterized in that they demonstrate neutralizing activity against two or more HIV strains from the same HIV subtype.

73. (original): The method of claim 69 wherein said neutralizing antibodies demonstrate neutralizing activity against two or more HIV strains selected from the group consisting of the following HIV isolates: Bal, JR-FL; Bx08; 6101; 692; 1168; 1196; and ADA.

74 to 78. (canceled).

79. (currently amended): ~~A~~ The composition according to claim 1, ~~as in any of claims 1-34~~ wherein said polypeptide component is administered in the form of a protein expressed on a virus like particle.

80. (original): A composition for generating an immune response in a mammal, said composition comprising,

a polynucleotide component comprising a polynucleotide encoding an HIV immunogenic polypeptide derived from a first HIV strain, and

a polypeptide component comprising an HIV immunogenic polypeptide analogous to the polypeptide encoded by said polynucleotide component, with the proviso that at least one HIV immunogenic polypeptide of the polypeptide component is derived from a second HIV strain, wherein said first HIV strain and said second HIV strain are different.

81. (original): A composition as in claim 80 wherein said second HIV strain is an HIV strain of the same subtype as said first HIV strain.

82. (original): A composition as in claim 81 wherein said second HIV strain is an HIV strain of a different subtype than said first HIV strain.

83. (canceled).

84. (new): The composition of claim 4, wherein the polynucleotide component encoding an HIV immunogenic polypeptide and the polypeptide component comprising an HIV immunogenic polypeptide comprise HIV envelope polypeptides.

85. (new): The composition of claim 4, wherein at least one of said polynucleotide components encoding an HIV immunogenic polypeptide and/or at least one of said polypeptides comprises an alteration or a mutation.

86. (new) The composition of claim 84, wherein said alteration or mutation is selected from the group consisting of a mutation in the cleavage site or a mutation in the glycosylation site; a deletion or modification of the V1 region; a deletion or modification of the V2 region; a deletion or modification of the V3 region; a mutation that exposes a neutralizing epitope of an HIV Env protein; and combinations thereof.

87. (new): The composition of claim 86, wherein at least one of said HIV polypeptide comprises an Env polypeptide and wherein at least one of said envelope polypeptides is modified to expose a CD4 binding region or an envelope binding region that binds to a CCR5 chemokine co-receptor.

88. (new) The composition of claim 4, wherein at least one polynucleotide encoding an HIV immunogenic polypeptide encodes an immunogenic HIV polypeptide selected from the group consisting of: Gag, Env, Pol, Prot, Int, RT, vif, vpr, vpu, tat, rev, and nef.

89. (new) The composition of claim 4, wherein the first HIV subtype is selected from the group consisting of: subtype A, subtype B, subtype C, subtype D, subtype E, subtype F, subtype G, subtype H, subtype I, subtype J, subtype K, subtype N and subtype O.

90. (new) A method of generating an immune response in a subject, comprising,

providing a composition for generating an immune response in a mammal according to claim 4;

administering one or more vectors comprising the polynucleotides of said polynucleotide component of the composition into said subject under conditions that are compatible with expression of said polynucleotides in said subject for the production of encoded HIV immunogenic polypeptides; and

administering the polypeptide component to said subject.